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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,304	10/27/2003	Jian Liu	15436.247.14.1	5109

22913 7590 11/21/2005

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EXAMINER

BOLDA, ERIC L

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,304

Applicant(s)

LIU ET AL.

Examiner

Eric Boldt

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 6-9, 13, 17-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-12, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/9/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of I.A.1.a.i.AA in the reply filed on Oct. 11, 2005 is acknowledged. The traversal is on the ground(s) that some of the species are not mutually exclusive. This is found persuasive in the case of the sub-species restrictions AA-DD (dopant composition), A or B (position of gain equalizing filter relative to gain section) and i or ii (grating in core or cladding), but *not* in the case of other species restrictions made. The Examiner reserves the right to impose a proper restriction based on the species dopant composition, position of gain equalizing filter, and grating in core or cladding. Hence the elected species at the present corresponds to I.1.a. Claims 1-5, 10-12 and 14-15 read on the elected species.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "comprising a length" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim, since there is at least an optical waveguide, a gain portion, and a gain equalization filter portion in claim 1 that each have a length. Furthermore, the phrase "comprising a length having a

standard value" does not narrow Claim 1, since the standard value of length is arbitrary. The claim is interpreted as best understood by the Examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 10-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Payne et al. (US Pat. No. 5,260,823).

With regard to claim 1, Payne discloses in Fig. 5 an optical waveguide comprising at least one gain section (10), and at least one gain equalization filter (12) that is optical coupled to the at least one gain portion. The gain equalization filter portion selectively attenuates wavelengths within the signal band such such that the gain of each wavelength in the optical signal is substantially equal (see Abstract).

With regard to claims 2 and 3, the gain equalization filter is before a first gain portion (fiber right of (12)) and after a second gain portion (fiber left of (12)). The structure is capable of pre-compensating for gain non-uniformities before the fiber portion to the right and compensating for gain non-uniformities after the receiving gain from the fiber portion to the left. Note that the clauses "adapted to" are essentially statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re

Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458;
Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

With regard to claim 4, the gain portions and the gain equalization filter portion are disposed in a single mode fiber (5th col. lines 56-57).

With regard to claim 10, the gain equalization filter portion is formed by a grating (14) mechanically pressed onto the fiber, achieving a core-cladding coupling. Hence it is inherent that the gain equalization filter portion is formed at least in the cladding (5th col. lines 55-69).

With regard to claim 11, the fiber is doped with Erbium.

With regard to claim 12, the gain equalization filter can include discrete, distributed, segments along the length of the optical amplifier (6th col. lines. 61-63)

With regard to claim 14, it is inherent that the optical fiber has a length.

6. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Espindola et al. (US Pat. No. 5,920,424). Espindola discloses in Fig. 1 an optical waveguide with two gain portions (13) and (14), and a gain equalization filter (16) that is optically coupled to the gain portions. The gain equalization filter portion selectively attenuates the optical

signal wavelengths so that the gains of each wavelength are within 2dB of each other (see Fig. 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Payne as applied to claim 1 above, and further in view of DiGiovanni et al. (US Pat. No. 5,659,644). Payne does not disclose that the gain equalization filter portion comprises a UV-written Bragg grating in the optical waveguide. However, DiGiovanni teaches (4th col. lines 25-29) a Bragg grating which is UV-written into the optical fiber. It would have been obvious to one skilled in the art (e. g. an optical engineer) to make the gain equalization filter of Payne in the manner of DiGiovanni for the purpose of increasing optical stability of the gain equalization filter.

Information Disclosure Statement

9. The information disclosure statements filed on Nov. 23, 2004, and May 9, 2005 have been considered by the Examiner.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Strasser, Tsuda et al., Paek et al., Lutz et al., and Wysocki et al.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Bolda whose telephone number is 571-272-8104. The examiner can normally be reached on M-F from 8:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Jack Keith, can be reached on 571-272-6878. Please note the fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EB

Eric Bolda


JACK KEITH
SUPERVISORY PATENT EXAMINER